

wheeled means and the ability to carry the same pack upon one's shoulders or back without detaching the pack from the pack carrier is a novel and very useful provision for the customizing pack carrier. A padded back support is indispensable for this purpose. Its presence allows the user of the pack carrier more flexibility as to how he transports his pack. It is also shown to serve as a comfortable backrest. Other uses for a back support detached from its carrier came about as unexpected but favorable nonetheless, all of which are submitted as dependent claims. The corresponding claims 85-96 have been narrowed down to convey the padded back support as a part of a main frame and base combination customizing pack carrier.

Claims 48-49 are withdrawn without substitution.

Claims 50 and 51, drawn to a method of adjusting the relative position of a pair of nesting tubes, have been narrowed down to claims 97 and 98, both dependent on claim 12. Any use for it on a materially different product is not claimed.

Claims 52-59 drawn to a method of providing a quasi-permanent terminal extended height of an extendible column, have been narrowed down to claims 99-106 that apply only to the main frame of a customizing pack carrier and not for a materially different product.

Claims 60-68 are withdrawn without substitution.


Claims 69-74 drawn to a method of transforming a pack carrier into a backrest with seat simply provides a seat and means to incline a customizing pack carrier. It simply gives a pack carrier an additional new and unexpected use. It's main use as a vehicle for transporting a pack has not changed, thus may belong to the same class and subclass as Invention I. The somewhat flexible pack already loaded on the carrier does not even have to be unloaded before one can use the seat and backrest provision. The new claims 107-112 are submitted for examination. The use of this idea on a materially different product is beyond the scope of these claims.

Conclusion:

Based on the above explanations, the applicant requests that the amended claims be eligible for examination since they are believed to be classified under class 280 and subclass 727+ as the elected Invention I.

Thank you for your consideration.

Very respectfully,



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Date 8/27/02

Inventor's signature

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Attachment A

76. A customizing pack carrier for a pack comprising:

- a) A main frame made up of one or more members dimensionally arranged to support a face of the pack when said face is leaned against it,
- b) A base frame having a top surface upon which the bottom of said pack rests comprising:
 - a) slidably related front and back sections,
 - b) wherein said front section has an underside where at least one support member is attached,
 - c) wherein said back section has an underside where a plurality of support members is attached,
 - d) wherein said front and back sections each contain a cavity capable of lodging an elastic member wherein one end of said elastic member is suspended inside said front section while the other end of said elastic member is suspended inside said back section,
 - e) wherein said front section further includes a substantially upright topside extension at its proximal end,

whereby pressure from the load directed normally to said topside extension automatically extends said elastic member and draws out said front section including said support legs attached to said underside of said front section thereby providing a stable bottom support for the pack at all times with minimum or no effort on the part of the user, whereby given a provision to anchor said pack to said main frame, the resulting loaded pack carrier is a neat looking and unified combination that is always stable even for varying load requirements, whereby when the top of said main frame is dimensionally within a person's arm reach and is mounted on casters, it becomes a pack carrier for walkers, and whereby when said main frame is dimensionally about a pack's height and is mounted on a bike, it becomes a pack carrier for upright or recumbent bike riders, and whereby when said main frame is incorporated in a scooter, it becomes a pack carrier for scooter riders.

77. The base frame in claim 76 wherein said back section of said base frame is permanently mounted to the bottom of a piece of luggage or backpack.
78. The base frame in claim 76 wherein said topside extension is collapsible by some means so that very deep packs beyond the extending capacity of said base frame can be adequately supported.
79. A customizing pack carrier for a pack comprising:
- a) A main frame made up of one or more members dimensionally arranged to support a face of a pack when said face is leaned against it,
 - b) base frame having a top surface upon which the bottom of said pack rests comprising:
 - a) slidably related front and back sections,
 - b) said front section having an underside wherein at least one support member is attached,
 - c) said back section having an underside wherein a plurality of support members is attached,
 - d) wherein one of said sections contain at least one substantially front-ward directed series of wavy indentations, each indentation having a crest and a trough,
 - e) wherein the other section contains at least one flexing button comprising: a) a button head with a smoothly curved side and straight side opposite each other, b) an elongated section or neck extending substantially in the same general direction as said wavy indentation,
 - f) wherein said other section in (e) also contains a separate rigid control member with one side disposed adjacent the straight side of said button head having a control contact protrusion terminating in a straight surface slidably related against said straight side of said button head, wherein said control member is externally controlled by some means to freely and fixedly lodge and dislodge said button from said trough of one of said indentations,

whereby said sections are free to slide past each other when said button head is freely able to dislodge from any indentation thereby allowing the base frame to be adjusted as needed to the depth of the load, whereby given a provision to anchor said pack to said main frame, the resulting loaded pack carrier is a neat looking and unified combination that can be stabilized even for varying load requirements.

80. The base frame in claim 79 wherein said neck of said button further includes a smoothly curved on/off protrusion on the same side as the said straight side of said button head, wherein said rigid control member also further includes an on/off extension on one side adjacent said on/off protrusion on said neck, whereby said on/off protrusion and on/off extension slidably fixes and frees said button head lodged in said trough of said indentation by virtue of the control contact protrusion slidably blocking and unblocking in conjunction with the straight side of said button head.
81. The base frame in claim 79 wherein the blocking and unblocking operation of said control contact protrusion disposed on said rigid control member includes the use of a compressible spring disposed inside a cavity in the section that houses said rigid control member, wherein said spring is compressible by the user-controlled rigid member as said control contact protrusion of said rigid member is moved to unblock said straight side of said button head thereby rendering said front and back sections of said frame free to be extended apart, wherein said control contact protrusion of said rigid member will automatically move back to block straight side of said button head when said compression is released.
82. A customizing pack carrier for a pack comprising:
- a) a main frame made up of one or more members dimensionally arranged to support a face of a pack when said face is leaned against it,
 - b) base frame having a top surface upon which the bottom of said pack rests comprising:
 - a) slidably related front and back sections,
 - b) said front section having an underside wherein at least one support member is attached,

- c) wherein one of said sections contain at least one substantially front-ward directed series of wavy indentations, each indentation having a crest and a trough,
- d) wherein the other section contain:
 - 1. at least one flexing button having a smoothly curved button head fixedly connected by an elongated member to a user-controlled box,
 - 2. a smoothly curved channel,
 - 3. an elastic member or spring disposed inside a cavity wherein said elastic member is compressible by said user-controlled box,

wherein said button and said elongated member can retract along said smoothly curved channel as said user-controlled box is pulled toward said elastic member, whereby said sections are rendered free to slide past each other when said button is in the retracted position thereby allowing the base frame to be adjusted as needed to the depth of the pack, whereby given a provision to anchor said pack to said main frame, the resulting loaded pack carrier is a neat looking and unified combination that can be stabilized even for varying load requirements.

83. A customizing pack carrier for a pack comprising:

- a) A main frame made up of one or more members dimensionally arranged to support face of a pack when said face is leaned against it,
- b) base frame for supporting a pack comprising:
 - a. a top surface of surface of sufficient size upon which the bottom of the pack rests,
 - b. an underside having a plurality of support members proximal to the rear edge of said base frame wherein said support members are equipped with swiveling casters,
 - c. an underside having at least one support member proximal to the front edge of said base frame wherein said support members are equipped with wheels selected from a group comprising of ball bearing glides and swiveling casters,

whereby a pack carrier having casters and glides on both the rear and front edges of said base frame can be easily maneuvered in any direction along narrow aisles and other tight spots in

school buses, inside school lockers, closets, and can provide the user easy access to the contents of the pack thereon.

84. The base frame in claim 83 wherein said underside in components (b) and (c) are formed as separate units.
85. A customizing pack carrier for a pack comprising:
- a) a main frame made up of one or more members dimensionally arranged to support a face of said pack when said face is leaned against it,
 - b) a base frame of size capable of supporting a pack load from the bottom,
 - c) a plurality of extensions from said base frame for adapting and mounting to a wheeled support,
 - d) a comfortable padded support of resilient material spanning a section of said main frame adjacent the load and disposed by some means selected from a group comprising of:
 - a. slipping an already looped cushioning envelope containing said resilient material over said main frame down to the lower section thereof,
 - b. enveloping the lower section of said main frame directly by fastening together the free edges of a wrap containing said resilient material by using laces, buckles, buttons, hook and loop fasteners, zippers or other state of the art means,
 - c. attaching a layer of resilient material directly onto strategic locations on said main frame using laces, clasps, clamps, buttons, hook and loop fasteners, zippers and the like,
 - d. enveloping existing individual columns of said main frame with separate cushioning wraps,
 - e. providing a semi-rigid or similar resilient plastic integral to the main frame, whereby an added layer of cushion between the rigid main frame of pack carriers and the back of the user provides more comfort and less fatigue and strain, and whereby when more desirable features are added to said padded support, said support can easily convert a plain pack carrier into an ergonomic pack carrier, whereby any pack

already loaded onto a pack carrier can still be carried comfortably in the backpack mode without having to detach it from its pack carrier.

86. A customizing pack carrier in claim 85 wherein said padded support comprises a layer of resilient material like foam, rubber, cotton, encased air, fiberfill, or the like having two faces bordered by two long and narrow sides and narrow top and bottom sides in a casing of fabric, plastic, vinyl, rubber, or similar flexible material.
87. The back support in claim 86 further including a supplemental cushion adjustably positioned on the face of the casing whereby said support further reduces strain on the user's back by distributing some of the weight towards the lumbar region of the user.
88. The back support in claim 86 further including a waist/hip belt attached to the lower section of both sides of the casing in (a), whereby said belt can double as a backpack retainer and a stabilizer.
89. The back support in claim 86 further including a shoulder harness attached to the lower section of both sides of said casing in (a) whereby said harness can be used for packs without shoulder straps or to substitute for a broken or worn out strap on a backpack.
90. The back support in claim 86 further including a pocket on a face of said casing wherein said pocket has a slit on the lower section of both sides for storing unused attachments from the other face of said casing.
91. The back support in claim 86 further including means for hanging onto any backpack comprising at least one loop structure on top, said loops capable of snugly receiving a pair of padded shoulder straps.

92. The back support in claim 86 further including means on the lower section of each said long side comprising a slit of size capable of receiving the lower unpadded section of a backpacks shoulder straps whereby said support is retained and urged closer to the backpack as the shoulder straps are used.
93. The back support in claim 86 further including another layer of casing of about the same size as the encased resilient material and joined to the latter at each of their respective long sides so that a loop is formed whereby the resulting looped support can be easily slipped onto the main frame of the pack carrier.
94. A customizing pack carrier in claim 85 wherein said padded support comprises a layer of resilient material like foam, rubber, encased air, cotton, fiberfill, or other similar material having a convex component whose lateral cross-section is of shape approximating all or a portion of the thoracic and upper lumbar regions of the spinal curvature as defined by correct posture of the user's body, whereby the presence of said convex component at the right place and the weight of the load against the user's shoulders direct a component of said weight toward the lumbar region urging the user to straighten up and allow user's back to approach his or her naturally correct spinal curvature, thus, encouraging and promoting good posture and less fatigue while carrying said pack carrier.
95. A back support in claim 94 wherein said lateral cross-sectional shape of said convex component ranges from teardrop with a flat side to a cut outer portion of a circle.
96. A back support in claim 94 wherein said convex component is detachable and adjustably mounted on the face of the pad adjacent said user's back by means selected from a group comprising of:
- a) using hook and loop fasteners wherein the hook component is on the side opposite the exposed convex face of said convex component and the loop component is on the face of the pad adjacent the user's back, and

b) providing a very stretchable pocket on the face of the pad adjacent the user's back, whereby when the hook and loop fastening means is selected and a loop component is also affixed to the back face of any backpack, the convex component of the back support can also be used in conjunction with such backpack.

97. The main frame in claim 12 wherein said means of extending and retaining positions of a pair of nested tubes, wherein said positions are capable of being held by a snap button disposed inside the inner tube of said pair of nesting tubes, wherein the positioning member of said snap button is engaged in an aperture on said inner tube and further capable of engaging into another aperture on the outer tube of said pair of nesting tubes comprise:

- a) providing a catching extension of predetermined shape and dimension behind the positioning member of said snap button, so that said extension can latch on to another bumper structure of shape and dimension determined in conjunction with those of said catching extension,
- b) providing reinforced anchoring means for said snap button to eliminate the possibility of displacement when said positioning member is depressed for an extended time,
- c) providing a third elongated member dimensionally receivable inside said inner tube, said elongated member having a bottom terminal containing said bumper structure,
- d) delivering said third elongated member into said inner tube to reach a maintained position where its said bumper structure is capable of holding onto said catch extension when said extension is introduced,
- e) introducing said catch extension by pressing said positioning member of said snap button inward until the extension latches onto the said bumper structure,
- f) moving inner and outer tubes relative to each other until the desired position is reached,
- g) withdrawing said third elongated member from said inner tube to release said bumper structure from said catch extension,
- h) finely adjusting positions of the inner and outer tubes relative to each other until said positioning member engages into the nearest aperture on said outer tube,

whereby this method when applied to an extendible unit with a plurality of tubular columns each of which having at least two tubular nesting tubes that can only be extended if done simultaneously as by lifting a transverse bar connecting their top terminals like that required of a telescoping pack carrier, easily enables only one person with at least one hand to perform height adjustments.

98. Means in claim 97 wherein the combination of said catch extension and said bumper structure is selected from a group comprising of:

- a) catch 54-2 and bumper 64-2 or their equivalents,
- b) catch 290 and bumper 289 or their equivalents, and
- c) catch 292 and bumper 292 or their equivalents.

99. A customizing pack carrier comprising:

- a) a pair of elongated members spaced apart and parallel each other by mounting means on a base joining bottom ends of said pair and by at least one transverse bar above said base,
- b) wherein said elongated members comprise a plurality of tubes each having predetermined longitudinal cross-sectional dimensions nested together and capable of being extended and retained in the extended position,
- c) wherein the topmost or smallest pair of tubes has a quasi-permanent extendible length by some means
- d) wherein said means to achieve a quasi-permanent extendible length for the smallest pair of tubes comprise:
 - a) providing a first tubular member having at least one terminal cavity along its length capable of receiving a positioning member disposed in another tubular member coming its way,
 - b) providing a second tubular member dimensionally receivable inside said first tubular member having a plurality of apertures strategically disposed along its body, each aperture defining a particular desired extended height of said extendible column,

- c) providing a control rod dimensionally receivable inside said second tubular member with at least one positioning member disposed along its length,
- d) providing a structure for lifting said second tubular member,
- e) assembling said above provisions by some means wherein the control rod is received inside the second tubular member which is received inside first tubular member,

wherein at least one of said positioning members is made communicable at least one at a time by the user to at least one of several height defining apertures in said second tubular member, wherein any of said positioning member engaged in one respective height-defining aperture of said second tubular member is further communicable to said terminal cavity in said first tubular member when the second tubular member is lifted out of the first tubular member thereby deterring further extension of said second tubular member.

whereby one pack carrier alone can accommodate kids and adult alike without the extra effort involved in the constant re-adjusting of the handle height each time the telescoping main frame is extended.

100. Means in claim 99 further including:

- a) a separate snap button disposed below said control rod having a positioning member engaged in another aperture in said second tubular member that defines an extended column height that is higher than that derived from the positioning members on said control rod,
 - b) means to anchor said control rod when none of its positioning members are active,
- whereby using separate snap button eliminates the otherwise needed extra length of said control rod to effect the same height options, thus, minimizing weight of the total assembly.

101. Means in claim 100 wherein said means to anchor said rod comprise an anchoring aperture disposed above the topmost said aperture on said second tubular member wherein said anchoring aperture is in the position of engaging the topmost said positioning member in said control rod when none of the positioning members in said rod are engaged in any height

defining aperture wherein said anchoring aperture is not communicable with said terminal cavity in said first tubular member, so that said rod is anchored even though none of its positioning members are engaged in any terminal aperture, whereby using just an additional aperture is an effective means of anchoring said rod.

102. Means in claim 99 wherein said plurality of apertures on second tubular member is arranged in a straight vertical line and wherein said positioning members in said control rod are arranged also in a straight vertical line adjacent or as close as possible and parallel said apertures on second tubular member and wherein said control rod is manipulated in an up or down direction to engage at least one said positioning member into one of the height-defining apertures.
103. Means in claim 99 wherein the positioning members on said control rod are arranged in a spiral manner along the length of said rod, wherein each positioning member is on the same horizontal plane as its respective height defining aperture on said second tubular member, wherein said control rod is manipulated in a clockwise or counterclockwise direction to engage at least one said positioning member into one of the height defining apertures on the second tubular member.
104. Means in claim 99 wherein a plurality of terminal cavities is arranged in a spiral manner along the length of said first tubular member, wherein said height-defining apertures are arranged along the same horizontal plane along the lower end of said second tubular member, wherein said control rod has at least one positioning member on the same horizontal plane as said height defining apertures, wherein said control rod is manipulated in a clockwise or counterclockwise direction to engage the one said positioning member into one of the height defining apertures wherein each height-defining aperture on second tubular member is communicable to a specific spirally disposed terminal cavity on the first tubular member.

105. Means in claim 99 wherein the positioning members on said control rod are arranged in a spiral manner along the length of said rod, wherein each positioning member is on the same horizontal plane as its respective height defining aperture on said second tubular member, wherein said second tubular member is manipulated in a clockwise or counter-clockwise direction to engage at least one said positioning member into one of the height defining apertures on the second tubular member.
106. Means in claim 99 wherein a plurality of terminal cavities is arranged in a spiral manner along the length of said first tubular member, wherein said height-defining apertures are arranged along the same horizontal plane along the lower end of said second tubular member, wherein said control rod has at least one positioning member on the same horizontal plane as said height-defining apertures, wherein said second tubular member is manipulated in a clockwise or counter-clockwise direction to engage the one said positioning member into one of the height defining apertures, wherein each height-defining aperture on the second tubular member is communicable to a specific spirally disposed terminal cavity on the first tubular member.
107. A customizing pack carrier for a pack comprising:
- a) a main frame made up of one or more members dimensionally arranged to support a face of said pack when said pack is leaned against it,
 - b) wherein said main frame could stay substantially upright,
 - c) a load supporting base frame that is substantially level,
 - d) wherein said base frame has an underside with a plurality of support members,
 - e) wherein the connection between said main frame and said base frame is provided with means to incline said main frame towards said base frame,
 - f) provisions for a seat comprising:
 1. a first sheet of material of sufficient size for use as said seat and to be retained by some means behind a load on said carrier when not in use,
 2. attachment means for said seat on said carrier,

whereby the said provisions and means to incline said main frame towards said base frame allow users to transform the customizing pack carrier into a backrest with seat even without unloading their pack from the carrier.

108. The customizing pack carrier in claim 107 wherein

a) said attachment means for said seat on said carrier comprise tying using a cord, ring or similar looped material at its distal corners to a lower section of said main frame of said carrier wherein said tie can freely move up and down a certain predetermined distance along said main frame,

b) said main frame further includes a cushioning envelope with an open bottom surrounding part of said main frame adjacent to the load, and said seat is concealed when not in use by urging up said seat through the open bottom of
c) said cushioning envelope, said cord, ring or similar looped material freely moving up said main frame with said seat until said seat is totally contained inside said cushioning envelope,

whereby the user can easily replace a worn-out seat and can easily conceal said seat, and whereby the user's clothes are not exposed to the dirty underside of a used seat when the carrier is used subsequently in the backpack mode.

109. The customizing pack carrier in claim 107 further including:

a) a second sheet of about the same size appended to the front edge of said first sheet of material to produce a double-layered seat,

b) attachment and retaining means for said double-layered seat on said carrier, whereby the appended said second sheet provides a protective ground cover for the underside of said first sheet so that dirt do not get onto the user's clothes thereafter when the carrier is used in the backpack mode.

110. The customizing pack carrier in claim 109 further including a cushioning envelope surrounding part of said main frame adjacent to the load wherein said attachment means for said double layered seat is selected from a group comprising of:

- a) fastening the rear end of said double-layered seat directly onto the bottom edge of the padding of said carrier by sewing, buttoning, using hook and loop fasteners, or other state of the art means, and
 - b) tying the rear corners of said double-layered seat to the lower section of said main frame, wherein said retaining means is selected from a group comprising of:
 - a) attaching said double-layered seat directly onto the exposed side of the cushioning envelope of said main frame, using buttons, ties, hooks, hook and loop fasteners, or other state of the art means,
 - b) attaching said double-layered seat directly to the main frame just above the cushioned section using buttons, ties, hooks, hook and loop fasteners, or other state of the art means.
111. The customizing pack carrier in claim 107 wherein said means for inclining said main frame is selected from a group comprising of:
- a) collapsing support members in front of said carrier,
 - b) arranging a fixable hinged connection between said base and said main frame,
 - c) designing base support members to accommodate rocking or rotational motion in conjunction with reinforcing the connection between the main frame and the base.
112. The customizing pack carrier in claim 111 wherein provision and operation of said fixable hinged connection between said base and said main frame comprise:
- a) providing the following on one part of said hinged connection:
 - 1. a circular hub having a normal centrally disposed cylindrical pin frame and a side window, said pin frame defining the axis of rotation of said hinged connection,
 - 2. a spring biased plug 189L or 189L' retained normally and rotatably on said pin frame in said hub by a compression spring, said plug having a locking member on one side and a button on one end, said button dimensionally receivable into said side window of said hub,
 - b) providing the following on the other part of said hinged connection:

1. a circular central recess having a central aperture for receiving an axis pin, said recess of size capable of receiving the rotating span of said locking member of said plug when said button of said plug is depressed,
 2. notches or recess extensions on the perimeter of said central recess, each capable of mating with said locking member when said button is not in its depressed position, wherein each notch corresponds to a specific relative position between said base and said frame,
- c) providing a hinge pin going through said pin frame and through said central aperture on said central recess, said pin being capped in place at both ends,
- d) depressing and maintaining depressed position of said button f said plug disposed outside said side window of said hub,
- e) urging one part of the said hinge connection to rotate past the other part until the desired relative position of both parts is reached after which pressure on said button is released and said locking tooth locks into position inside one of said recess extension,
- whereby said operation is easy, quick, flexible and lockable in the inclined and fully folded positions.

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